23. (Amended) A method for correcting the figure of a substrate, comprising:

attaching a figure-correcting layer to an interface;

attaching said interface to a surface of said substrate, wherein said interface is between said substrate and said figure-correcting layer; and

locally adjusting the thickness of said figure-correcting layer to produce a desired surface figure.

REMARKS

Claims 1-32 were presented for examination, are pending and are rejected. Reconsideration is respectfully requested.

Drawings

A proposed drawing correction or corrected drawings is required by the examiner. Re requirement is respectfully traversed. Figures 1A and 1B illustrate embodiments of the present invention. Therefore the objection should be withdrawn.

Specification

The disclosure is objected to for informalities.

The term "EUVL" has been defined on page 6.

The term "PSDI" has been defined on page 8.

The term "embed" has been replaced with "imbed" on page 11.

The phrase "that a" has been replaced with "in which" on page 11.

The description on page 12, lines 10-21 has been moved to the "BACKGROUND OF THE INVENTION" section.

The phrase "accomplished as electron" has been corrected to read "accomplished through an electron" on page 14, line 20.

Therefore the objection should be withdrawn.

The 35 U.S.C. § 102 Rejections

Claims 1, 2, 5, 6, 11, 18 and 19 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sun ('538). The rejection is respectfully traversed.

The applicants' claim 1 measures the figure of a surface of a substrate. In optics, the term "figure" is defined as the geometrical form of an optical surface. See The Photonics Disctionary, 41st Edition, Laurin Publishing Co., Inc. 1995. This element is missing from the disclosure of Sun. Sun measures the thickness of a thin film and controls a film removal process with the thickness measurement to determine a stop point with planarization as the objective. Since Sun lacks the step of measuring the figure of a surface, it also lacks the steps of applying a figure-correcting layer to a surface of the substrate; locally adjusting the thickness of the figure-correcting layer; and measuring the thickness of the figure-correcting layer. Further, Sun lacks attaching a figure correcting layer to the surface of the substrate,

as clarified in the applicants' amended claim 1. Therefore the rejection of claim 1 should be withdrawn. The rejection if claims 2, 5, 6, 11, 18 and 19 should be withdrawn at least because they depend from claim 1. Therefore the rejection should be withdrawn.

The 35 U.S.C. § 103 Rejections

Claims 3, 4, 7, 8, 14-17, 21-28, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun. The rejection is respectfully traversed.

The rejection of claims 3, 4, 7, 8, 14-17, 21 and 22 should be withdrawn because they depend from claim 1 which should be allowable over Sun as discussed above.

The applicants' claim 23 recites a method for correcting the figure of a substrate. The reference does not correct the figure of a substrate, it planarizes a substrate. The reference does not apply and adhere a figure-correcting layer to the interface and the interface to the surface of a substrate, it uses a slurry in the planarization process. Claim 23 has been amended to recite that the figure correcting layer adheres to the interface which adheres to the surface of the substrate. Therefore the rejection of claim 23 should be withdrawn. The rejection of claims 24-28, 31 and 32 should be withdrawn because they depend from claim 23. Therefore the rejection should be withdrawn.

Claims 9, 10 and 29 are rejected as being unpatentable over Sun in view of Engelsberg. The rejection is respectfully traversed.

Claims 9 and 10 depend from claim 1 and should therefore be allowable. Claim 29 depends from claim 23 and should therefore be allowable. Therefore the rejection should be withdrawn.

Claims 12 and 30 are rejected as being unpatentable over Sun in view of Katzir et al. The rejection is respectfully traversed.

Claim 12 depends from claim 1 and should therefore be allowable. Claim 30 depends from claim 23 and should therefore be allowable. Therefore the rejection should be withdrawn.

Claim 13 is rejected as being unpatentable over Sun in view of Ju et al. The rejection is respectfully traversed.

Claim 13 depends from claim 1 and should therefore be allowable. Therefore the rejection should be withdrawn.

Claim 20 is rejected as being unpatentable over Sun in view of O'Boyle et al. The rejection is respectfully traversed.

Claim 20 depends from claim 1 and should therefore be allowable. Therefore the rejection should be withdrawn.

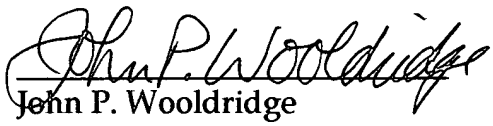
Conclusions

It is submitted that this application is in condition for allowance based on claims 1-32 in view of the amendments thereto and the foregoing comments.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made."

If any impediments remain to prompt allowance of the case, please contact the undersigned at 925-292-8652.

Respectfully submitted,



John P. Wooldridge
Attorney for Applicant
Registration No. 38,725

Dated: November 18, 2002

Version with Markings to Show Changes Made

In the Specification

The disclosure has been amended as follows.

On page 6, lines 6-8, the sentence: "Current methods make it very difficult to fabricate mirrors fast enough to provide for the expected number of commercial EUVL steppers that will be needed." has been replaced with the sentence: --Current methods make it very difficult to fabricate mirrors fast enough to provide for the expected number of commercial Extreme Ultraviolet Lithography (EUVL) steppers that will be needed.--

On page 8, lines 2-4, the sentence: "The thickness of the figure-correcting layer is locally measured and the desired thickness is obtained from the PSDI measurement." has been replaced with the sentence: --The thickness of the figure-correcting layer is locally measured and the desired thickness is obtained from the phase shifting diffraction interferometer (PSDI) measurement.--

On page 11, lines 7-8, the sentence: "One could embed the materials by ion implantation or by vacuum deposition." has been replaced with the sentence: --One could imbed the materials by ion implantation or by vacuum deposition.--

On page 11, lines 11-13, the sentence: "No additional marking layer is required for the case that a figure correcting film of a different material is added after measuring the figure of the substrate." has been replaced with the sentence: --

No additional marking layer is required for the case in which a figure correcting film of a different material is added after measuring the figure of the substrate.--

The paragraph: "Thin films have been used in the past to correct the figure of mirrors by depositing thin films of the desired thickness profile on top of a substrate using evaporation masks. See W. C. Sweatt, J. W. Weed, A. V. Farnsworth, M. E. Warren, M. E. Neumann, R. S. Goeke, and R. N. Shagan, "Improving The Figure Of Very Good Mirrors By Deposition," OSA Trends in Optics and Photonics Vol.4, "Extreme Ultraviolet Lithography", G. Kubiak and D. Kania, Eds. Washington, DC, Optical Soc. Of America, 1996., pp. 149-155. See also C. Tarrio, E. Spiller, C. J. Evans, T. B. Lucatorto, and C. C. V, "Post-Polish Figuring Of Optical Surfaces Using Multilayer Deposition," ibid., pp. 144-148. However, it is time consuming and requires many iterations to produce the masks for general corrections in 2-D that is described by higher order polynomials." on page 12, lines 10-21 has been moved to page 5, line 21, after the sentence ending with the word "optics".

On page 14, line 20, through page 15, line 2, the sentence: "The modification is accomplished an electron, ion, or photon induced deposition or etching process 24, and the thickness is monitored with an optical monitor 26." has been replaced with the sentence: -- The modification is accomplished through an electron, ion, or photon induced deposition or etching process 24, and the thickness is monitored with an optical monitor 26.--

In the Claims:

Claims 1 and 23 have been amended as follows:

1. (Amended) A method for correcting the figure of a substrate, comprising:

measuring the figure of a surface of said substrate;

[applying] attaching a figure-correcting layer to a surface of said substrate;

locally adjusting the thickness of said figure-correcting layer; and

measuring the thickness of said figure-correcting layer.

23. (Amended) A method for correcting the figure of a substrate, comprising:

[applying] attaching a figure-correcting layer [and] to an interface;

attaching said interface to a surface of said substrate, wherein said interface is between said substrate and said figure-correcting layer; and

locally adjusting the thickness of said figure-correcting layer to produce a desired surface figure.